

# REPORT ON ELECTRIC FITTINGS.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

24 MAY 1935

Date of writing Report 23. 5. 35 When handed in at Local Office 23. 5. 35 Port of MIDDLESBROUGH.

No. in Survey held at SUNDERLAND. Date, First Survey 24. 4. 35 Last Survey 16. 5. 1935.  
Reg. Book. (Number of Visits 5)

on the S. S. "CRAGSIDE"

Tons { Gross  
Net

Built at HAVERTON HILL-ON-TEES By whom built FURNESS SHIPBUILDING CO LTD Yard No. 245 When built 1935

Owners TYNE TEES STEAM SHIPPING CO LTD Port belonging to STOCKTON.

Electric Light Installation fitted by FURNESS SHIPBUILDING CO LTD Contract No. 245 When fitted 1935

Is the Vessel fitted for carrying Petroleum in bulk

System of Distribution Two WIRE ✓

Pressure of supply for Lighting 110 volts, Heating — volts, Power —

Direct or Alternating Current, Lighting DIRECT ✓ Power —

If alternating current system, state frequency of periods per second

Has the Automatic Governor been tested and found efficient when the whole load is suddenly thrown on or off YES ✓

Generators, do they comply with the requirements regarding rating YES ✓, are they compound wound YES ✓

are they over compounded 5 per cent. —, if not compound wound state distance between each generator —

Where more than one generator is fitted are they arranged to run in parallel —, is an adjustable regulating resistance fitted in series with each shunt field YES ✓

Are all terminals accessible, clearly marked, and furnished with sockets YES ✓, are they so spaced or shielded that they cannot be accidentally earthed, short circuited, or touched YES ✓

Position of Generator STARB ENGINE RM. ✓

is the ventilation in way of the generators satisfactory YES ✓, are they clear of all inflammable material YES ✓

if situated near unprotected woodwork or other combustible material, state distance of same horizontally from or vertically above the generators

— and —, are the generators protected from mechanical injury and damage from water, steam or oil YES ✓

are their axes of rotation fore and aft YES ✓

Earthing, are the bedplates and frames of the generating plant efficiently earthed YES ✓ are the prime movers and their respective generators in metallic contact YES ✓

Main Switch Boards, where placed STARB ENGINE RM ON FORWARD END OF ENGINEERS STORE. ✓

If the generators and main switchboard are not placed in the same compartment, is each generator provided with a fuse on each insulated pole as near as possible to the terminals of the generator, additional to that provided on the main switchboard —

Switchboards, are they placed in accessible positions, free from inflammable gases and acid fumes YES ✓

are they protected from mechanical injury and damage from water, steam or oil YES ✓, if situated near unprotected woodwork or other combustible material, state distance of same horizontally from or vertically above the switchboards — and —

are they constructed wholly of durable, non-ignitable non-absorbent materials YES ✓, is all insulation of high dielectric strength and of permanently high insulation resistance YES ✓

with mica or micanite or other non-hygroscopic insulating material, and the slab similarly insulated from its framework

and is the frame effectively earthed YES ✓. Are the fittings as per Rule regarding:— spacing or shielding of live parts

YES ✓, accessibility of all parts YES ✓, absence of fuses on back of board YES ✓, proportion of omnibus

bars YES ✓, individual fuses to voltmeter, pilot or earth lamp YES ✓, connections of switches YES ✓

Main Switchgear, description of switchgear for each generator and each outgoing circuit, and arrangement of equalizer switches D. POLE SWITCHES

AND FUSES FOR GENERATOR, D. POLE SWITCH AND FUSES FOR EACH OUTGOING CIRCUIT.

Instruments on main switchboard ONE ammeter ONE voltmeter — synchronising device for paralleling purposes.

Earth Testing, state what means are provided at the main switchboard for indicating the state of the insulation of the system TWO 10 WATT LAMPS

IN SERIES WITH CENTRE POINT EARTHED.

Switches, Circuit Breakers and Fusible Cut-outs, do these comply with the requirements of the Rules YES ✓

Joint Boxes Section and Distribution Boards, is the construction, protection, insulation, material, and position of these as per rule YES ✓



Cables: Single, twin, concentric, or multicore SINGLE + TWIN are the cables insulated and protected as per Tables IV or V of the Rules IV

Fall of Pressure, state maximum between bus bars and any point of the installation under maximum load 4 VOLTS

Cable Sockets and other connections, are the ends of all cables having a sectional area of 0.04 square inch and above provided with soldering sockets YES

Paper Insulated Cables, If cables are paper covered, is the dielectric at the exposed ends of the conductor protected from moisture by being suitably sealed with insulating compound YES

Cable Runs, are the cables fixed as far as possible in accessible positions not exposed to drip or accumulation of water or oil, or to high temperature from boilers, steam pipes, uptakes or other hot objects, or to avoidable risk of mechanical damage YES

Support and Protection of Cables, state how the cables are supported and protected L.C.A. + B CABLES BY GALV. IRON CLIPS AND BRASS SCREWS. L.C. CABLES BY BRASS CLIPS AND SCREWS.

If cables are run in wood casings, are the casings and caps secured by screws YES, are the cap screws of brass YES, are the cables run in separate grooves YES. If armoured and lead covered cables are secured by metal clips, are the clips spaced as per Table VIII YES.

Refrigerated Chambers, if lights are fitted, are the cables and fittings in accordance with the special requirements YES

Joints in Cables, state if any, and how made, insulated, and protected PORCELAIN CONNECTORS IN WATER-TIGHT BOXES

Watertight Glands and Deck Tubes, are all cables passing through decks and watertight bulkheads provided with deck tubes or watertight glands YES

Bushes in Beams and Non-watertight Partitions, where unarmoured cables pass through beams and non-watertight partitions, are the holes efficiently bushed YES state the material of which the bushes are made LEAD

Earthing Connections, state what earthing connections are fitted and their respective sectional areas 50% OF SECTIONAL AREA OF FEEDER CABLES.

are their connections made as per Rule YES

Alternative Lighting, are the groups of lights in the propelling machinery space arranged as per Rule YES

Emergency Supply, state position and method of control of the emergency supply and how the generator is driven YES

Navigation Lamps, are these separately wired YES, controlled by separate switch and separate fuses YES, are the fuses double pole YES

are the switches and fuses grouped in a position accessible only to the officers on watch YES

has each navigation lamp an automatic indicator as per Rule YES

Secondary Batteries, are they constructed and fitted as per Rule YES

Fittings, are all fittings on weather decks, in stokeholds and engine rooms and wherever exposed to drip or condensed moisture, watertight YES

are any fittings placed in spaces in which goods are liable to be stacked in close proximity to them; if so, how are they protected YES

are any fittings placed in spaces where inflammable or explosive dust or gases are liable to be present, if so, how are they protected YES

how are the cables led YES

where are the controlling switches situated YES

Searchlight Lamps, No. of YES, whether fixed or portable YES, are their fittings as per Rule YES

Arc Lamps, other than searchlight lamps, No. of YES, are their live parts insulated from the frame or case YES, are their fittings as per Rule YES

Motors, are their working parts readily accessible YES, are the coils self-contained and readily removable for replacement YES

are the brushes, brush holders, terminals and lubricating arrangements as per Rule YES, are the motors placed in well-ventilated compartments in which inflammable gases cannot accumulate and clear of all inflammable material YES

are they protected from mechanical injury and damage from water, steam or oil YES are their axes of rotation fore and aft YES

if situated near unprotected woodwork or other combustible material, are the motors of the totally enclosed, pipe ventilated, forced draught, drip or flame proof type YES

if not of this type, state distance of the combustible material horizontally or vertically above the motors YES and YES

Control Gear and Resistances, are the generator field and motor speed regulators, starters and controllers constructed and fitted as per Rule YES

Lightning Conductors, where lightning conductors are required, are these fitted as per Rule YES

Ships carrying Oil having a Flash Point less than 150° F. Have the special requirements of the Rules been complied with regarding switches, joint boxes, section and distribution boards, protection of cables, method of distribution, lead of cables, lights and fittings YES

If portable lamps for use in dangerous spaces are supplied, are they of a type approved by the Home Office YES

## PARTICULARS OF GENERATING PLANT.

DESCRIPTION OF GENERATOR.	No. of	RATED AT				DRIVEN BY	WHERE DRIVEN BY AN INTERNAL COMBUSTION ENGINE.	
		Kilowatts.	Volts.	Ampères.	Revs. per Min.		Fuel Used.	Flash Point of Fuel.
MAIN ...	1	2.5	110	22.7	900	STEAM ENGINE		
AUXILIARY ...								
EMERGENCY ...								
ROTARY TRANSFORMER								

## GENERATOR, LIGHTING AND HEATING CONDUCTORS.

DESCRIPTION.	CONDUCTORS.		COMPOSITION OF STRAND.		TOTAL MAXIMUM CURRENT.		Approximate Length. (Lead and Return.) Feet.	Insulated with	HOW PROTECTED.
	No. per Pole.	Total Effective Area per Pole Sq. Ins.	No.	Diameter.	In Circuit.	Rule.			
MAIN GENERATOR ...	1	.01	7	.044	15.6	31	25'-0"	V.I.R.	L.C.A. + B.
EQUALISER CONNECTIONS									
AUXILIARY GENERATOR ...									
EMERGENCY GENERATOR									
ROTARY TRANSFORMER									
MOTOR GENERATOR									
ENGINE ROOM ...									
BOILER ROOM ...									
AUXILIARY SWITCHBOARDS									
ACCOMMODATION + ENGINE ROOM	1	.003	3	.036	8.3	12	40'-0"	V.I.R.	L.C.A. + B.
NAVIGATION	1	.002	3	.029	2.4	7.8	20'-0"	"	"
WIRELESS									
SEARCHLIGHT	1	.002	3	.029	.4	7.8	300	"	L.C.A. + B.
MASTHEAD LIGHT	1	.002	3	.029	.4	7.8	45	"	L.C.A. + B.
SIDE LIGHTS	1	.002	3	.029	.1	7.8	21	"	L.C.A. + B.
COMPASS LIGHTS	1	.002	3	.029	.4	7.8	145	"	L.C.A. + B.
PORT LIGHTS	1	.002	3	.029	.4	7.8	200'-0"	V.I.R.	L.C.A. + B.
CARGO LIGHTS									
ARC LAMPS									
HEATERS									

## MOTOR CONDUCTORS.

DESCRIPTION.	No. of Motors.	CONDUCTORS.		COMPOSITION OF STRAND.		TOTAL MAXIMUM CURRENT.		Approximate Length. (Lead and Return.) Feet.	Insulated with	HOW PROTECTED.
		No. Per Pole.	Total Effective Area per Pole Sq. Ins.	No.	Diameter.	In Circuit.	Rule.			
BALLAST PUMP ...										
MAIN BILGE LINE PUMPS										
GENERAL SERVICE PUMP										
EMERGENCY BILGE PUMP										
SANITARY PUMP										
CIRC. SEA WATER PUMPS										
CIRC. FRESH WATER PUMPS										
AIR COMPRESSOR										
FRESH WATER PUMP										
ENGINE TURNING GEAR										
ENGINE REVERSING GEAR										
LUBRICATING OIL PUMPS										
OIL FUEL TRANSFER PUMP										
WINDLASS										
WINCHES, FORWARD										
WINCHES, AFT										
STEERING GEAR										
(a) MOTOR GENERATOR										
(b) MAIN MOTOR										
WORKSHOP MOTOR										
VENTILATING FANS										



All Conductors are of annealed copper conforming to British Standard Specification No. 7.  
The Insulated Conductors are guaranteed to withstand the immersion and resistance tests specified in the Rules.  
The foregoing is a correct description.

FURNESS SHIPBUILDING CO. LIMITED

P. J. Glover

Electrical Engineer

Date 20-5-35

### COMPASSES.

Distance between electric generators or motors and standard compass

Distance between electric generators or motors and steering compass

50'

The nearest cables to the compasses are as follows:—

A cable carrying 1 Ampères feet from standard compass 4 feet from steering compass.

A cable carrying Ampères feet from standard compass feet from steering compass.

A cable carrying Ampères feet from standard compass feet from steering compass.

Have the compasses been adjusted with and without the electric installation at work at full power YES

Has the effect of switching on and off circuits, motors and other electro-magnetic apparatus within the vicinity of the compasses been noted YES

The maximum deviation due to electric currents was found to be degrees on course in the case of the standard compass, and NIL degrees on ALL course in the case of the steering compass.

FURNESS SHIPBUILDING CO. LIMITED,

W. T. Badger

Builder's Signature.

Date 20/5/35.

Director.

Is this installation a duplicate of a previous case No. If so, state name of vessel

General Remarks (State quality of workmanship, opinions as to class, &c.)

The materials and workmanship are good.  
This electric light installation has been fitted aboard under special survey and in accordance with the Rules. It has been tested under working conditions with satisfactory results, and is, in my opinion, suitable for a classed vessel.

Noted

27/5/35

Total Capacity of Generators 2 1/2 Kilowatts.

The amount of Fee ... £ 2-10-0

Travelling Expenses (if any) £

When applied for, 21.5.1935

When received, 2-7-1935

M. T. Badger

W. T. Badger

Surveyor to Lloyd's Register of Shipping.

Committee's Minute

FRI. 31 MAY 1935

Assigned

See minute on F.E. Rpt.



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